Radically simplifying backup and archiving

**DATA SHEET**
**FUJITSU Storage ETERNUS CS8000 Data Protection Appliance**

**ETERNUS CS Backup Appliance**
The ETERNUS® CS portfolio offers data protection solutions for all company sizes and needs:
- ETERNUS CS200c is an integrated backup appliance providing small and mid-sized environments with a complete solution without the need for additional backup software.
- ETERNUS CS800 is a deduplication appliance dedicated for cost efficient backup to disk in small and mid-sized environments.
- The unified data protection appliance ETERNUS CS8000 allows upper mid-sized and large enterprises a complete consolidation of backup and archiving infrastructures of open systems and mainframes.

**ETERNUS CS8000**
FUJITSU Storage ETERNUS CS8000 is a unified data protection appliance for the complete consolidation of backup and archiving infrastructures of open systems and mainframes.

Thanks to uniform management of disks, deduplicated disks and tapes flexible service levels regarding capacity, speed and cost can be provided. A modular grid architecture delivers extreme scalability of capacity and performance. Integrated data mirroring and replication features enable comprehensive disaster recovery concepts.

Flexible SAN and Ethernet connectivity as well as VTL, NAS and WORM support allow you to use one system for backup and archiving. And support for the cloud gateway functionality makes ETERNUS CS8000 an ideal and future-proof solution for a unified and optimized data protection infrastructure.
# Features & Benefits

<table>
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<tr>
<th>Main Features</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>One consolidation platform for backup and archiving for open systems and mainframes</td>
<td>Thanks to complete consolidation all disk and tape target systems for mainframes and open systems enable large savings in infrastructure investments and costs of operation. Combining VTL and the NAS option for backup, archiving and second-tier storage in one appliance further increases operational efficiency. Integrated management of disks, deduplicated disk and tapes enables flexible service levels in terms of capacity, backup/restore speed and media costs. The support for cloud gateway functionality leverages own investments in storage capacity and enables disaster recovery concepts without investing in own DR sites.</td>
</tr>
<tr>
<td>Extremely scalable grid architecture</td>
<td>Flexible scalability of performance and capacity reduce high upfront pre-investments and support a pay-as-you grow approach. Allocate storage resources for data protection according to business priorities. Industry-leading backup and restore performance enable you to manage extreme data growth and volume without migration risks. Parallelization of deduplication processes delivers the performance headroom required to benefit from data reduction even in petabyte-scale environments.</td>
</tr>
<tr>
<td>Comprehensive high availability and disaster recovery capabilities</td>
<td>No single point of failure even for the deduplication store. Asynchronous replication and synchronous mirroring enable flexible DR concepts depending on remote distance and recovery time needs. Manages multiple data copies on local and remote targets to align the availability level of data with its importance to the business. Automated processes ensure a highly efficient DC operation, easy media migrations, scheduled media refreshes to prevent data corruption and the ability to eliminate fatal errors in highly complex data protection environments.</td>
</tr>
</tbody>
</table>
Models and architecture

ETERNUS CS8000 architecture
- Three different basic architectures are available, the "scale-up" model CS8200, the "scale-out-single-site" model CS8400 and the "scale-out-split-site" model CS8800. Each model is an appliance built with several components providing fully redundant solution architectures.

CS8200 - the scale-up model
- The CS8200 model is available either as a VTL system for backup purposes, or as a NAS system for archive and second-tier file storage purposes. The main components are a pair of front-end nodes and a scalable RAID system. The front-end nodes receive the data and store it on the RAID system.
- With a VTL system, the data is first stored to disk. Thanks to the ETERNUS CS8000 tape automation functions, data can be copied to an attached tape library. For disaster recovery scenarios, data can be copied to a remote tape library or can be replicated to a second ETERNUS CS8000 system via integrated and automated storage-based asynchronous replication. An option for data which is to remain only on disk is that the appliance can be provided with an integrated high-available deduplication disk store with automatic failover. To consolidate data protection infrastructures and to ensure investment protection, CS8200 can be provided for mainframe and open system environments, even in parallel.
- With a NAS system, data can be received via NFS and CIFS interfaces. Optional WORM functionality enables long-term storage for compliant archive purposes. For disaster recovery scenarios, data can be replicated to a second ETERNUS CS8000 system via integrated and automated storage-based asynchronous replication. Furthermore, an integrated and automated backup is available in order to protect the data on the NAS system. This backup data can also be replicated to a second ETERNUS CS8000 system.

CS8400 - the scale-out-single-site model
- The CS8400 model is a unified data protection appliance. Backup, archive and second-tier file storage, data from mainframe and open system environments can be consolidated in a single CS8400. In addition to this unified approach, CS8400 can be provided as a VTL-only system or as a NAS-only system.
- All the functions for the CS8200 VTL system are also available for the CS8400 VTL subsystem; the functions of the CS8200 NAS system are available for the CS8400 NAS subsystem.
- In contrast to the scale-up model the CS8400 provides a scale-out approach. It is scalable in capacity as well as in performance. Several dedicated front-end nodes can be added flexibly in order to increase the data transfer from the hosts to the ETERNUS CS8400 system. Several dedicated back-end nodes that handle the data transfer to the attached tape libraries can also be easily added. Of course, the internal RAID system providing the disk capacity is scalable, but several RAID systems can also be added, thus providing a single storage pool of up to 22.2 PB, for the overall system. All components are redundantly connected, thus providing a single, high-available real scale-out system without any single point of failure.
- CS8400 supports the cache-mirror feature in order to increase the availability level for the data itself by enabling the synchronous mirroring of data within the internal RAID systems.
- With the CS8400 NAS subsystem an integrated and automated HSM (Hierarchical Storage Management) function is available as an option, using tape automation functionality in order to copy data to attached tape libraries. WORM tape is supported for compliant archive requirements in addition to the WORM functionality on disk level.

CS8800 - the scale-out-split-site model
- All the features, functions and architecture highlights specified for the CS8400 model are also available for the CS8800 model.
- CS8800 also offers a split-site function. One logical ETERNUS CS8800 system can be deployed over two geographically separated sites. The internal ETERNUS CSS800 infrastructure is thus extended to a second site – still representing one single system thanks to the cache-mirror feature. Data can be written to or read from both sites. The system internal automatic failover ensures that data remains available even if a complete site is affected by a disaster. Combined with the highly automated tape integration, the result is a system with no single point of failure which provides the highest levels of data availability.
## Technical details

### General system information

<table>
<thead>
<tr>
<th>Model</th>
<th>CS8200</th>
<th>CS8400</th>
<th>CS8800</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Scale-up System</td>
<td>Scale-out single-site System</td>
<td>Scale-out split-site System</td>
</tr>
<tr>
<td>Host connectivity options</td>
<td>VTL, VTL with Dedup, NAS</td>
<td>VTL, VTL with Dedup, NAS</td>
<td>VTL, VTL with Dedup, NAS</td>
</tr>
<tr>
<td>Hardware platform</td>
<td>S12</td>
<td>S12</td>
<td>S12</td>
</tr>
<tr>
<td>Software version</td>
<td>V6.0 SP02</td>
<td>V6.0 SP02</td>
<td>V6.0 SP02</td>
</tr>
<tr>
<td>RAID capacity</td>
<td>7 TB - 1,392 TB</td>
<td>7 TB - 22,272 TB</td>
<td>7 TB - 22,272 TB</td>
</tr>
</tbody>
</table>

### VTL Subsystem

- **Sustained Performance (max.):**
  - CS8200: 30 TB/h
  - CS8400: 150 TB/h
  - CS8800: 150 TB/h
- **VTL Front-end Ports:**
  - CS8200: 4 to 8 FC 16 Gb/FICON 8 Gb
  - CS8400: 4 to 40 FC 16 Gb/FICON 8 Gb
  - CS8800: 4 to 40 FC 16 Gb/FICON 8 Gb
- **Virtual Tape Drives:**
  - CS8200: 32 to 64
  - CS8400: 32 to 1,280
  - CS8800: 32 to 1,280
- **Virtual Tape Volumes (max.):**
  - CS8200: 300,000
  - CS8400: 1,500,000
  - CS8800: 3,000,000
- **VTL Back-end Port Options:**
  - CS8200: 4 to 8 FC 16 Gb
  - CS8400: 4 to 40 FC 16 Gb
  - CS8800: 4 to 40 FC 16 Gb
- **Physical Tape Volumes (max.):**
  - CS8200: 50,000
  - CS8400: 50,000
  - CS8800: 50,000
- **Deduplication Store Option (raw):**
  - CS8200: 1 TB - 960 TB
  - CS8400: 1 TB - 4,500 TB
  - CS8800: 1 TB - 4,500 TB

### NAS Subsystem

- **Supported NAS protocols:**
  - NFS, CIFS
  - NFS, CIFS
  - NFS, CIFS
- **NAS Front-end Ports:**
  - CS8200: 4 to 8 x 1 GbE or 2 to 8 x 10 GbE
  - CS8400: 4 to 40 x 1 GbE or 2 to 40 x 10 GbE
  - CS8800: 4 to 40 x 1 GbE or 2 to 40 x 10 GbE
- **NAS Shares (max.):**
  - CS8200: 2,048
  - CS8400: 2,048
  - CS8800: 2,048
- **Number of Files:**
  - CS8200: 2 Billion
  - CS8400: 2 Billion
  - CS8800: 2 Billion
- **NAS Back-end Port Options:**
  - CS8200: (no HSM)
  - CS8400: 4 to 16 active FC 16 Gb
  - CS8800: 4 to 16 active FC 16 Gb

### Physical Tape Support

- **Physical Tape Drives (max.):**
  - CS8200: 10
  - CS8400: 112
  - CS8800: 112
- **Physical Tape Libraries supported (max.):**
  - CS8200: 10
  - CS8400: 10
  - CS8800: 10

### Supported environments - excerpt

#### Host interoperability
- Bull (GCoS)
- Fujitsu (MSP, XSP, VME (ICL), BS2000/OSD)
- IBM (z/OS, z/OS, i5/OS, zVM, z/VSE)
- Open Systems (AIX®, HP-UX®, Solaris®, SUSE® LINUX®, Red Hat® LINUX, z/Linux, Windows®, NDMP Backup (NetApp, EMC®)) For the detailed support matrix please contact your Fujitsu sales representative

#### Supported backup and archiving software for open systems
- Atempo (Time Navigator)
- CommVault (Simpana)
- Computer Associates (BrightStor ARCserve Backup)
- EMC (NetWorker, DiskXtender)
- HP (DataProtector)
- IBM® (Tivoli® Storage Manager)
- SEP (Sesam)
- Seven Ten Storage (StorFirst Altus)
- Symantec® (Backup Exec, NetBackup, EnterpriseVault)
- Veeam (Backup & Replication)
- For the detailed support matrix please contact your Fujitsu sales representative

#### Supported physical tape libraries
- Fujitsu (ETERNUS LT40, LT60, LT130, LT160, LT270; 9054-221; 3560; FibreCAT TX24/ TX45)
- IBM (3494, 3554 / TS3500)
- Oracle®/StorageTek® (SL500, SL1400, SL3000, SL5000, L150, L700/E, L5500, PowderHorn9310, TimberWolf 9740) Quantum/ADIC (Scalari500, Scalari2000, Scalar16k, Scalar 10k, Scalar 100, Scalar 1000, AMU/JL, AMU/E, AMU/2) Spectra Logic (Spectra TS0, T120, T200, T350, T650, T950)
- For the detailed support matrix please contact your Fujitsu sales representative
Supported environments - excerpt

Supported physical tape drives
- IBM (Magstar 3590, Jaguar 3592 / TS1120 / TS1130 / TS1140)
- LTO Ultrium (Gen 1, Gen 2, Gen 3, Gen 4, Gen 5, Gen 6)
- Oracle/StorageTek (T9040, T9940, T10000)
- For the detailed support matrix please contact your Fujitsu sales representative

Installation specification

<table>
<thead>
<tr>
<th>Model</th>
<th>CS8200</th>
<th>CS8400</th>
<th>CS8800</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimension -per rack (W x D x H)</td>
<td>700 x 1050 x 2030 mm</td>
<td>27.6 x 41.3 x 79.9 inch</td>
<td></td>
</tr>
<tr>
<td>Height unit standard</td>
<td>42 U</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of racks</td>
<td>1-3</td>
<td>1-35</td>
<td>2-36</td>
</tr>
<tr>
<td>Weight</td>
<td>992.10 lbs. (450 kg)</td>
<td>1221.36 lbs. (554 kg)</td>
<td>2162.73 lbs. (971 kg)</td>
</tr>
<tr>
<td>Power voltage</td>
<td>Industry: 1, 2 or 3 phases of 230 V/US: 2 supplies of 205 V (phase to phase)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power frequency</td>
<td>50/60 Hz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum Power Consumption</td>
<td>Industry: 1, 2 or 3 phases of 230V: 10,160 W</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum Power Consumption</td>
<td>US: 2 supplies of 205 V (phase to phase): 10,160 W</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power consumption (standby)</td>
<td>2,060 W</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power consumption (under load)</td>
<td>2,360 W</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heat generation</td>
<td>5,496 kj/h / 5,053 BTU/h</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Notes</td>
<td>Weight, power consumption and heat generation are stated for a typical system configuration. Due to high scalability, detailed values are calculated and available through the configuration tool SysARC (System Architect).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power phase</td>
<td>Single, Dual or Triple</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuse protection</td>
<td>Industry: 16A per phase (fuses not coupled) US: 20A per phase (fuses not coupled) To be cared about by the customer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Connector Options</td>
<td>2 x CEE 3x16A (3 phases red plug) 2-6 CEE 1x16A (1 phase blue plug) 2-6 L6-30 (US: 2 phases 205V)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Notes</td>
<td>Power Connection Options: Default is 2 x CEE 3x16A (best power redundancy, which is highly recommended). Each configuration will be analyzed in SysARC and the internal power distribution will be set for maximum power redundancy. A mix inside a Rack is not allowed. Each rack can be individually configured.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Environmental

- Room air conditioned: Recommended, at 20°C (68°F)
- Floor supply: No
- Temperature (operating): Long term at 20°C (68°F), max. 2 hours at minimum 15°C or maximum of 35°C (59 to 95°F)
- Temperature (not operating): -20 - 40°C (-4 - 104°F)
- Humidity (operating): Long Term: approx. 50% RH; tolerances at 30 to 70% RH (relative humidity, non-condensing)
- Humidity (not operating): 30 - 70% (relative humidity, non-condensing)
- Altitude: 3,000 m (10,000 ft.)
- Sound pressure (dB(A)): <60
- Operating environment: FTSO423O - Guideline for Data Center (installation specification)

Warranty

- Enhanced Plus Warranty: 1 year
- Service level: Onsite Service
- Warranty Terms & Conditions: www.fujitsu.com/support

Compliance

- Product safety: CE, UL/CSA
- Electromagnetic Compatibility: CE, FCC Class A
## Compliance

<table>
<thead>
<tr>
<th>Electromagnetic Immunity</th>
<th>CE, FCC</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE certification</td>
<td>2011/65/EC</td>
</tr>
<tr>
<td>Approvals</td>
<td>RoHS</td>
</tr>
<tr>
<td>Environmental compliance</td>
<td>RoHS compliant</td>
</tr>
</tbody>
</table>

**Compliance notes**

There is general compliance with the safety requirements of all European countries and North America. National approvals required in order to satisfy statutory regulations or for other reasons can be applied for on request.
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More information
Learn more about Fujitsu ETERNUS CS8000, please contact your Fujitsu sales representative or Fujitsu Business partner, or visit our website. www.fujitsu.com/eternus

Fujitsu green policy innovation
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FPGS-7362-01 01/15.
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